

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

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LISTING OF CLAIMSAmendments to the Claims:

- 10 Claim 1 (Currently amended) An ink-jet printing apparatus, comprising:
 a printhead portion including an underprinting fixer fluid comprising a
 cationic polymer and a printhead portion including an ink composition com-
 prising an anionic component, the anionic component comprising a water-
 soluble anionic binder and a water-soluble dye, the anionic binder comprising
15 polymers having a complexing group, the complexing group being selected
 from the group consisting of Ethylene Diamine Tetraacetic Acid, Acetyl Ace-
 tonate Maleic Anhydride, an Acrylate and combinations thereof ;
 wherein the cationic polymer is a polyelectrolyte selected from the group
 consisting of $R_1R_2R_3R_4N^+$; $R_1R_2R_3R_4P^+$ and $R_1R_2R_3R_4As^+$, and where R can
20 be H, alkyl or other organic substituent, and where the weight average mo-
 lecular weight of the polyelectrolyte is from 2000 up to 10,000 weight average
 molecular weight;
 and wherein the cationic polymer is in solution with non-polymeric cations se-
 lected from the group consisting of calcium ions, aluminum ions, barium ions,
25 strontium ions, zinc ions, magnesium ions and titanium ions;
 and wherein, when the ink composition is printed on a medium over the fixer
 fluid printed on the medium, the ink composition and fixer fluid together form
 an amorphous viscous fluid, the viscous fluid having a viscosity greater than
 the ink composition.
- 30 Claims 2-4 (Canceled)

Claim 5 (Previously presented) The apparatus of Claim 1, wherein the cationic polymers comprises styrene.

5 Claim 6 (Previously presented) The apparatus of Claim 1, wherein the anionic binder comprises hydrolyzed styrene maleic anhydride.

Claim 7 (Previously presented) The apparatus of Claim 1, wherein the dye in the anionic component has anionic functional groups.

- 10 Claim 8 (Previously presented) The apparatus of Claim 7, wherein the dyes having anionic functional groups is selected from the group consisting of sulfonated dyes with non-polar groups, dyes with protonatable groups, dyes with carboxylate groups and dyes with phosphonate groups.
- 15 Claim 9 (Original) The apparatus of Claim 1, wherein the ink composition further comprises low-molecular weight hydrophilic compounds.

20 Claim 10 (Original) The apparatus of Claim 9, wherein the low-molecular weight hydrophilic compounds are selected from the group consisting of inorganic salts and lower alcohols.

Claim 11 (Canceled)

Claim 12 (Canceled)

25 Claim 13 (Previously presented) The apparatus of claim 1, wherein the polyelectrolytes comprises branched or linear polymer chains.

Claim 14 (Canceled)

30 Claim 15 (Previously presented) The apparatus of Claim 1, wherein the cationic polymers is tetrasubstituted ammonium salts.

Claims 16-33 (Canceled)

Claim 34 (Currently amended) A method of ink-jet printing, the method comprising the steps of:

- 5 a) ejecting at a location on a medium an underprinting fixer fluid comprising at least one cationic polymer;
- b) ejecting at the location on the medium an ink composition comprising at least one anionic component; the anionic component comprising a water-soluble anionic binder and
- 10 a water-soluble dye, the anionic binder comprising polymers having a complexing group, the complexing group being selected from the group consisting of Ethylene Diamine Tetraacetic Acid, Acetyl Acetonate Maleic Anhydride, an Acrylate and combinations thereof ; wherein the cationic polymer is a polyelectrolyte selected from the group
- 15 consisting of $R_1R_2R_3R_4N^+$, $R_1R_2R_3R_4P^+$ and $R_1R_2R_3R_4As^+$, and where R can be H, alkyl or other organic substituent, and where the weight average molecular weight of the polyelectrolyte is from 2000 up to 10,000 weight average molecular weight;
- and wherein the cationic polymer is in solution with non-polymeric cations selected from the group consisting of calcium ions, aluminum ions, barium ions, strontium ions, zinc ions, magnesium ions and titanium ions;
- 20 and wherein the ink composition and the fixer fluid together form an amorphous viscous fluid, the viscous fluid having a viscosity greater than the ink composition.

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Claims 35-37 (Canceled)

Claim 38 (Previously presented) The method of Claim 34, wherein the cationic polymers comprises styrene.

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Claim 39 (Previously presented) The method of claim 34, wherein the anionic binder comprises hydrolyzed styrene maleic anhydride.

Claim 40 (Previously presented) The method of Claim 34, wherein the dye in the anionic component has anionic functional groups.

5 Claim 41 (Previously presented) The method of Claim 40, wherein the dyes having anionic functional groups is selected from the group consisting of sulfonated dyes with non-polar groups, dyes with protonatable groups, dyes with carboxylate groups and dyes with phosphonate groups.

10 Claim 42 (Original) The method of Claim 34, wherein the ink composition further comprises low-molecular weight hydrophilic compounds.

15 Claim 43 (Original) The method of Claim 42, wherein the low-molecular weight hydrophilic compounds are selected from the group consisting of inorganic salts and lower alcohols.

Claims 44-45 (Canceled)

Claim 46 (Currently amended) The method of Claim 34, wherein the polyelectrolytes comprises branched polymer chains.

20 Claim 47 (Canceled)

Claim 48 (Previously presented) The method of Claim 34, wherein the cationic polymers is tetrasubstituted ammonium salts.

25 Claims 49-57 (Canceled)